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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,203	02/01/2002	Shinji Matsuo	1752-0154P	7503
2292	7590	08/07/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			THOMPSON, CAMIE S	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/060,203

Applicant(s)

MATSUO ET AL.

Examiner

Camie S. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 4 and 6-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 6-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. <u>07/27/2006</u> .                                  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____.  | 6) <input type="checkbox"/> Other: _____.                                   |

### **DETAILED ACTION**

1. Applicant's amendment and accompanying remarks filed May 24, 2006 are acknowledged.
2. Examiner acknowledges amended claims 1 and 6-9.
3. Examiner acknowledges cancelled claims 2-3 and 5.
4. Examiner acknowledges newly added claims 11 and 12.
5. The objection of claims 1, 6-7 and 9 is overcome by applicant's amending of claims 1, 6-7 and 9.
6. The rejection of claims 1 and 6-10 under 35 U.S.C. 103(a) as being unpatentable over Nakaya et al., U.S. Patent Number 5,792,557 is overcome by applicant's amendment. The rejection of claim 4 as unpatentable over Nakaya et al. is withdrawn. Nakaya et al. alone was not applicable to claim 4. The rejection of claims 2 and 3 as unpatentable over Nakaya et al. is rendered moot by claim cancellation.

### ***Claim Objections***

7. Claim 12 is objected to because of the following informalities:  
In claim 12, "phenanthlyl" should apparently read - - phenanthryl- -. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 4 and 6-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are rendered indefinite because the formula for the triarylamine as set forth in claims 1 and 6-8 contains two nitrogen atoms, but the claims that recite that the triarylamine contains 2 to 4 nitrogen atoms. The presence of three or four nitrogen atoms is not commensurate with the formula recited in the claims.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

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reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

11. Claims 1, 4 and 6-12 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Higarashi et al., U.S. Patent Number 6,617,051.

Higarashi discloses an organic electroluminescent device that comprises organic compound layers sandwiched between a pair of electrodes, wherein at least one organic compound layer is formed from an organic compound material having an impurity concentration of lower than 1000 ppm (see column 2, lines 8-15). Additionally, the reference discloses a purified hole transporting material, N,N'-di(naphthyl-1-yl)-N,N'-diphenyl-4,4'-benzidine (NPD) in a hole transporting layer of the electroluminescent device (see column 35, lines 1-68, column 39, line 50-column 41, line 2 and Table 2). NPD is the triarylamine named in present claim 4, and meets the limitations of the triarylamine of the formula set forth in claims 1 and 6-8, and further defined in claims 11 and 12. The reference discloses that the impurities in the NPD were smaller than 1000 ppm. Column 2, lines 37-40 and column 35, line 60-64 of the reference disclose that the organic compound material is purified through sublimation.

With the respect to the recited life, the test is conducted on a device in which the hole transporting layer "consists" of the recited triarylamine. The recited composition may comprise components other than the recited triarylamine. The life test is not necessarily conducted with a device comprising a hole-transporting layer of the claimed composition. Also, the "life test" is a **capable of** limitation. It is reasonable to expect that the purified NPD of the prior art is capable of providing a device meeting the life test limitation of the present claims. Further, as is known

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in the art, various factors affect the life of a device. For example, encapsulation is known to improve device lifetime. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the purified NPD of Higarashi in a hole transporting layer, and optimize the device structure so as to optimize the operating life of the device.

Further, with respect to triarylamine compounds of the present recited formula other than NPD, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention, to purify other amines as taught by the prior art.

### *Response to Arguments*

12. Applicant's arguments with respect to the instant claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MARIE YAMNITZKY  
PRIMARY EXAMINER

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